

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Inquiry Concerning 911 Access, Routing, and)	PS Docket No. 17-239
Location in Enterprise Communications)	
Systems)	
)	

**REPLY COMMENTS OF NCTA – THE INTERNET & TELEVISION
ASSOCIATION**

NCTA – The Internet & Television Association (NCTA) supports the Commission’s goal of ensuring the reliability of the nation’s 911 communications system, and appreciates this opportunity to provide comment on its inquiry into the 911 capabilities of Enterprise Communications Systems (ECS).¹ ECS provide customers with innovative, scalable offerings that are designed to meet the needs of customers with multiple handset locations, such as office buildings, college and university campuses, and hotels. As the deployment of increasingly advanced ECS products continues the industry’s movement to an all-IP world, it is timely for the Commission to launch this inquiry into the capability of ECS to provide efficient, reliable access to emergency services.

In exploring the issues raised in the *NOI*, the Commission should bear in mind that there are significant differences between providing 911 access to ECS customers and other voice customers, such as residential consumers, irrespective of technology. For ECS, the provision of accurate, granular location information to a PSAP presents more complex technical challenges than delivering the same information for residential service. ECS involves not only the service

¹ *Inquiry Concerning 911 Access, Routing, and Location in Enterprise Communications Systems*, PS Docket No. 17-239, Notice of Inquiry, 32 FCC Rcd 7923 (2017) (*NOI*).

provider and end user, but also manufacturers and ECS programmers. Coordination and assignment of responsibilities among these ECS functions must be done seamlessly to ensure that 911 services function properly. For example, ECS offerings that have the capability to deliver granular station location information on 911 calls generally require the end-user enterprise customers to furnish and continually update the location information regarding their handsets in order for PSAPs to receive the accurate granular location of a 911 call. Before implementing rules associated with ECS 911 functions, the Commission should continue to work with industry stakeholders, manufacturers and users to first identify the different types of ECS and unique challenges associated with provision of accurate and granular 911 information for such services. Because the technological features of ECS products are continuing to evolve rapidly, enacting prescriptive 911 access requirements prematurely could slow the pace of progress in ECS technology.

I. PROVIDING 911 TO ECS CUSTOMERS IS MORE CHALLENGING THAN PROVIDING 911 TO FIXED RESIDENTIAL CUSTOMERS

In the *NOI*, the Commission asks for comment on the degree to which “ECS enable and support direct access to 911, routing to the correct PSAP, and the provision of accurate location information about the end user.”² The Commission also expresses concern that the “911 capabilities of ECS appear to have lagged behind those of wireless, wireline, and interconnected VoIP,” seeking to identify the reasons why this might be the case.³

The Commission’s comparison to the 911 capabilities of other voice services appears to ignore the fact that, in contrast to residential voice services, ECS offerings involve multiple

² *Id.* at ¶ 21.

³ *Id.* at ¶ 3.

handsets, potentially in disparate locations. As a result, providing granular location information for individual callers is more challenging for service providers.

PBX- and cloud-based ECS products offered by NCTA members often have the capability to relay multiple NANP numbers and station locations to PSAPs. The accuracy of this information, however, depends on the end-user enterprise customer providing accurate location information when the handsets are installed and then updating the location information each time a handset is moved to a new location.⁴

With respect to 911 dialing and routing patterns, different parties may control those configurations depending on the type of ECS. The provider of the underlying trunking or voice service to the PBX may have no visibility into or oversight of how the PBX equipment is programmed. For example, an ECS that uses an on-site PBX may require the operator of the PBX to establish both the dialing and call routing patterns for voice traffic.⁵ As a result, the PBX operator could require a user to dial “9” before placing a 911 call or could decide to route 911 calls to an internal emergency answering desk rather than to the appropriate PSAP. In this circumstance, the ECS provider has no way of knowing that 911 calls are being placed or routed in this manner. Conversely, the calling configurations for cloud-based services are often controlled by the voice service provider. Providers of such services can configure the systems to

⁴ See, e.g., California PUC Comments at 9 (“The CPUC agreed that there was a significant customer role and responsibility to establish, submit, and maintain accurate and up-to-date 9-1-1 database records of MLTS end-users’ phone stations.”); Comments of West Safety Services at 19 (“Granular location detail such as individual stations, floor or building is usually provided by the enterprise owner or system administrator. . . . It is not feasible for a cloud-based VoIP provider to automatically register the location of each station because this requires knowledge of the location of stations within the enterprise.”).

⁵ The capabilities of particular PBX equipment vary depending upon its age and whether it is IP-compatible.

ensure that 9-1-1 can be reached without dialing a “9” or other leading digit to access a line that has outbound calling capability.

II. THE COMMISSION SHOULD EXPLORE THE BEST MEANS OF IMPROVING THE ACCURACY AND RELIABILITY OF ECS

If the Commission ultimately adopts a baseline set of rules, those rules should account for factors that are outside the service provider’s control. For example, the rules would need to recognize that ECS providers may not have control over the routing of 911 calls or how any N-1-1 digits are programmed into ECS equipment when a business uses a PBX. This issue is particularly acute when multiple business locations route traffic through a shared PBX. As Cisco notes in its comments:

[I]t is the enterprise that decides how its outbound traffic flows to the public network. Small or satellite offices are often configured so that all traffic first flows via a private connection to a larger office, where calls destined for the public network are handed off to a service provider at the gateway device. Enterprises should arrange with the service provider to backhaul calls that are local to the satellite office to that satellite office’s exchange area for completion, but sometimes enterprises do not choose to do that. If so, then the wrong PSAP answers the emergency call.⁶

In addition, the rules would need to account for the fact that ECS customers must provide and maintain up-to-date location information to ensure that accurate, granular location information is transmitted to the PSAP, rendering the location information actionable and useful to public safety entities.

The Commission should consider collaborative efforts with the states to develop a common ECS policy that takes into account specific state needs. This path forward would

⁶ Cisco Comments at 17-18.

balance the Commission's desire for a base level of nationwide uniformity with the states' desire to customize ECS 911 requirements to address their particular priorities.⁷

In addition to federal or state efforts, the Commission may wish to encourage industry bodies to continue to focus their attention on establishing appropriate benchmark standards for ECS 911. Among other matters, this work could focus on ensuring that the NENA Model Legislation is updated regularly given the ongoing evolution of ECS offerings.⁸ Such industry efforts also could focus on ensuring that the various parties involved in the provision of ECS access to emergency services, including end-user customers, understand their responsibilities, and ensure the appropriate allocation of responsibility for ECS 911 among providers, manufacturers and ECS equipment programmers. For example, end-user customers must recognize their obligation to update on an ongoing basis accurate location information for each telephone number.⁹ The Commission at this point should not, however, mandate compliance with particular industry standards or best practices and should not otherwise adopt prescriptive rules to govern the 911 capabilities of ECS. Doing so prematurely would hinder the deployment and development of IP-based ECS services and functionalities.¹⁰

In the *NOI* the Commission asks whether the National Emergency Address Database (NEAD), which is currently under development for use in locating wireless 911 callers indoors,

⁷ *NOI* at ¶ 38.

⁸ NENA, MLTS Model Legislation (2015), http://c.ymcdn.com/sites/www.nena.org/resource/collection/C3D071C2-FACD-41CB-A09C-354888272EF8/MLTS_2015.pdf.

⁹ AT&T Comments at 4-5.

¹⁰ For example, certain providers are offering different types of ECS services that include both traditional PBX-trunked services and IP cloud-based ECS services that have different and additional functions. Accordingly, a one-size-fits-all approach could cause significant operational and development burdens that could force similarly-situated providers to delay deployment of services or more advanced functionality.

could be leveraged to provide in-building ECS 911 location information.¹¹ Because the NEAD has not yet been tested or implemented, it would be premature at this time for the Commission to consider expanding this new database to a different application for which it was not designed. In fact, attempting to extend the NEAD to ECS at this time could, as some commenters imply, delay implementation of the NEAD for its intended function—to improve indoor location accuracy for mobile calls.¹² The NEAD system is designed to provide more accurate indoor location data for a caller from a mobile wireless device by leveraging location information for nearby wireless access points, which is readily available to smartphones with Wi-Fi capability. It is not clear as a technical matter how the NEAD system could be extended to an ECS environment where most handsets are wireline rather than mobile wireless.

¹¹ *NOI* at ¶ 26.

¹² *See* APCO Comments at 2 (“To the extent that there would be potential advantages to populating the NEAD with additional reference points afforded by ECS, such opportunities should be explored, so long as doing so does not impede the work presently underway towards improving wireless 911 location accuracy.”); Verizon Comments at 3, n.6 (“There . . . is potential for ECS technologies to leverage the NEAD or a similar 911 call location method, though in the near term industry will need to focus on the NEAD’s principal wireless 911 purpose.”)

CONCLUSION

In considering the 911 capabilities of ECS, the Commission should bear in mind the complexity of multi-line enterprise voice offerings and the substantial role that enterprise customers play in providing and updating accurate location information, and should examine state efforts and the NENA Model Legislation to inform its inquiry.

Respectfully submitted,

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